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United States Department of the Interior

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FISH AND WILDLIFE SERVICE

Sharon/Dick

IN REPLY REFER TO:

Ecological Services
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May 7, 1997

Mr. Lester S. Snow
Executive Director
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, California 95814

Subject: Review of Draft Ecosystem Restoration Program Plan Vision Element Documents

Dear Mr. Snow:

The Service provides the following general and specific comments concerning the draft Ecosystem Restoration Program Plan Vision Element Documents:

(1) Introduction to Species and Species Group Visions

(2) Introduction to Habitat Visions

(3) Introduction to Ecological Process Visions

(4) Introduction to Stressor Visions

Introduction to Species and Species Group Visions

General Comments:

(1) In sections on resident Delta native fish (*i.e.*, delta smelt (*Hypomsus transpacificus*), Sacramento splittail (*Pogonichthys macrolepidotus*), longfin smelt (*Spirinchus thaleichthys*), *etc.*), the focus should be on protecting larvae, juveniles and adult fish. Spawning adults are important life-stages that need to be protected from effects of diversions, contaminants, and changed hydrology (reversed or changed flows that move fish to unsuitable spawning areas) when they move to upstream areas in the Delta. In general, the timing of the upstream spawning movement is late winter and early spring.

(2) In discussions on how Delta outflow is beneficial to resident Delta native fish, emphasis should be on placement of X2 downstream of Collinsville at Chipps Island and Roe Island in Suisun Bay where the strength of the entrapment zone and shallow water habitat allow high productivity for rearing fish. Additionally, placement of X2 in these areas maintains fish outside of the zone of influence of the south Delta export facilities and downstream of sources of Delta contaminants (including San Joaquin River selenium and agricultural pesticides and

fertilizers). Operation of CVP and SWP existing upstream storage is effected by placement of X2 and so should be mentioned in the context of fish benefits.

(3) In discussion of how fish facilities may be improved to reduce losses of Delta native fish, improved fish handling and trucking practices and additional release sites are critical. Additional release sites in upstream and downstream areas will reduce predation through the ability to stop fish releases at sites periodically which will discourage predators from congregating. Also, upstream migrating adult fish should be released in upstream areas and downstream moving juvenile fish should be released in downstream areas to decrease stress, energy expenditure, and possibility of repeat salvaging if fish are required to retrace their routes.

(4) The first paragraph of this section gives the following criteria for inclusion of species: "...designated as a species of concern by the U.S. Fish and Wildlife Service;" and "...are ecologically important as a prey or foodweb species". These two criteria would generate a list much longer than the one given in Table 1. Notable groups of species not included are (1) anthicid, aegialian scarab, curved footed diving, and blister beetles, (2) bats, and (3) vernal pool crustaceans.

(5) Some plant species (*e.g.*, federal and state listed species) should be considered for inclusion in the list of species here rather than in just the habitat sections.

(6) Similarly, rare community types (*e.g.*, Mixed Great Valley Riparian Forest, Mature Great Valley Cottonwood Riparian Forest, Great Valley Valley Oak Riparian Forest, Northern Claypan Vernal Pool and others) are worthy of specific attention here, possibly as guilds, or in the habitats section. Because rare communities are as unique, valuable and irreplaceable as species are, the Ecosystem Restoration Program Plan would be strengthened in scope and credibility by their specific consideration.

(7) Citations should be included for all sections.

Specific Comments:

(1) Page 1, **Delta Smelt**, Introduction, 1st sentence: "The delta smelt is a native estuarine resident fish that has been listed as threatened under the State and federal Endangered Species Acts".

Comment: Add, "...the State and federal Endangered Species Acts **and has critical habitat designated under the federal Endangered Species Act**".

(2) Page 1, **Delta Smelt**, Introduction, 2nd sentence: "Major factors that limit this species' contribution to the health of the Delta are related to the adverse effects of low Delta outflow,...".

Comment: Add, "... to the adverse effects of low Delta outflow **and resultant upstream movement of X2 away from suitable rearing habitat in Suisun Bay,** ...".

(3) Page 1, **Delta Smelt**, Background, 2nd paragraph, 1st sentence: "Delta smelt are found within a relatively restricted geographical range (generally in upper Suisun Bay and the Delta) where the quality and quantity of shallow-water, marsh-slough habitat has been diminished from wetland reclamation".

Comment: Revise to: "Delta smelt are found within a relatively restricted geographical range (generally **from the Carquinez Straits east to Suisun Marsh and Bay** and the Delta) where the quality and quantity of shallow-water, marsh-slough habitat has been diminished from wetland reclamation **and water exports and reduced releases from upstream CVP and SWP reservoirs that have decreased Delta outflow and moved X2 upstream to deep river channels.**"

(4) Page 1, **Delta Smelt**, Background, 2nd paragraph, 3rd sentence: "Increased habitat and expanded distribution of delta smelt can be realized through habitat restoration accompanied by improvements in ecosystem processes including streamflow, stream channels, and floodplain inundation."

Comment: Add, "including streamflow, stream channels, **increased Delta outflow with resulting X2 placement in suitable rearing areas in Suisun Bay,** and floodplain inundation ...".

(5) Page 2, **Delta Smelt**, Background, 1st paragraph, 2nd sentence: "Spawning occurs in fresh water in the upstream areas of the Delta. Construction of levees ...".

Comment: Revise to- "**Adults move from rearing areas in Suisun Bay from late December to early March and spawn** in fresh water in the upstream areas of the Delta. **Larvae and juvenile fish move downstream with spring flows to rearing habitat in Suisun Bay.** Construction of levees ..."

(4) Page 3, **Delta Smelt**, Restoration Needs, 1st bullet: "Improve Delta outflow during the **late winter** and spring ... to disperse larvae and juveniles ...".

Comment: Add, "Improve Delta outflow during the late winter and spring ... **to stimulate upstream migration of adult spawners and** to disperse larvae and juveniles ...

(5) Page 3, **Delta Smelt**, Restoration Needs, 2nd and 5th bullets: "when larvae and juveniles appear/are present in the Delta".

Comment: Add, "when **adults**, larvae and juveniles appear/are present in the Delta".

(6) Page 2, **Longfin Smelt**, Background, bullet 5, first sentence: "In dry years, many larval and juvenile longfin smelt rearing in the Delta ...".

Comment: Add, "In dry years, **upstream migrating adults and** many larval and juvenile longfin smelt rearing in the Delta ..."

(7) Page 2, **Longfin Smelt**, Background, bullet 5, last sentence: "Of those reaching the pumping plants, some are recovered in fish salvage facilities and returned to the Bay, while others are lost in water pumped to the Delta-Mendota Canal".

Comment: Add, "..., while others are lost in water pumped to the Delta-Mendota Canal. Those fish recovered in fish salvage may have less than 100 percent survival due to handling and trucking to release sites and predation after release".

(8) Page 3, **Longfin Smelt**, Background, first complete bullet, last sentence: The effect may be indirect through reduced planktonic food supply or direct from toxin-induced egg, larval, or juvenile stress or mortality".

Comment: Add, "... direct from toxin-induced egg, larval, juvenile **or adult** stress or mortality".

(9) Page 3, **Longfin Smelt**, Restoration Needs, second bullet: "limit the extent of net southerly flows toward the south Delta pumps where larvae and juveniles are subject to being exported,".

Comment: Add, "... toward the south Delta pumps where larvae, juveniles, **and adults** are subject to being exported,".

(10) Page 2, **Splittail**, Background, 1st complete sentence: "Dams and levees restrict access to historical, seasonally flooded spawning and rearing habitat".

Comment: Add two sentences: "..., seasonally flooded spawning and rearing habitat. **Millions of splittail appear at the salvage facilities in some years. Many of these fish are lost due to handling and trucking to release sites and subsequent predation.**"

(11) Page 2, **Splittail**, Restoration Needs, 1st complete sentence: "Splittail would benefit from improvements in spawning and rearing habitat, late winter and spring river flows, and reductions to water diversions.

Comment: Add, "Splittail would benefit from improvements in spawning and rearing habitat **including placement of X2 west of Collinsville,** late winter and spring river flows, and reductions to water diversions **and export pumping at the CVP and SWP and increases to upstream releases at CVP and SWP reservoirs at appropriate times**".

(12) Page 2, **Splittail**, Restoration Needs, 4th paragraph, 2nd sentence: "Actions to reduce losses include upgrading existing fish protection facilities, ...".

Comment: Add, "Actions to reduce losses include upgrading existing fish protection facilities **including reducing mortality through handling and trucking and adding new release sites for flexibility of use during various fish life-stages, ..."**

(13) Page 2, **White and Green Sturgeon**, Restoration Needs, paragraph 6, 3rd sentence: "Actions to reduce losses include ...".

Comment: Add, "Actions to reduce losses include **providing sports fishers with identification materials so that they may distinguish between white and green sturgeon (*Acipenser transmontanus and medirostris*, respectively) and release captured green sturgeon, ...".**

Introduction to Habitat Visions--

General Comments:

(1) When creating or enhancing shallow-water areas as spawning habitat for Delta native fish, adequate flows to attract upstream migrating adults and, later, to move larvae and juvenile fish to downstream rearing areas in Suisun Bay are critical aspects of habitat. Shallow-water spawning habitat should not be created where adequate flows are unavailable to move fish to Suisun Bay or where south Delta export pumping will entrain larvae and juveniles as they move downstream or adult fish as they move upstream to spawn. Additionally, shallow-water spawning habitat should not be created in areas where water quality is poor (the south Delta is a good example of this) and where agricultural or other types of diversions would entrain larvae, juveniles or adult fish.

(2) Numbers of species which rely on specific habitats could be more precise (we can provide species lists). Examples:

a. Under Tidal Perennial Aquatic Habitats "Nearly 100 animal and plant species identified as threatened or endangered under the California and federal Endangered Species Acts rely....";

b. Under Saline Emergent Wetland, "More than 25 species of birds and mammals use saline emergent wetlands in the estuary".

(3) The following are general comments concerning habitat types mentioned in this document in reference to giant garter snake (*Thanmophis gigas*):

a. Delta Sloughs. Most of the larger and hence, navigable sloughs do not leave "narrow strips of emerging shoreline habitat", as mentioned in the visions. Former slough habitats are now unsuitable because of the routine practice of placing riprap along both sides of the banks to combat wave erosion. Steep sides are preferred for constructing boat docks and launch ramps.

b. Fresh Emergent Wetland Habitat. The visions document continually refers to historic practices for the loss of this habitat type. The Caldoni marsh, one of the largest remaining freshwater marshes

in the Delta lost 280 acres of habitat during the construction of Interstate 5 in 1978 and only 50 acres now remain, protected in a California Department of Fish and Game wildlife preserve.

Many potentially high quality marsh habitats still in existence suffer from unpredictable water management for irrigation purposes.

c. Seasonal Wetland Habitat. The primary threat to seasonal wetlands (not mentioned in the visions) is urban development. Large scale land conversions routinely do not avoid any wetlands, resulting in permanent regional losses of habitat, further threatening the species that depend upon them.

The visions emphasize managing seasonal wetlands for benefitting winter waterfowl. Many relatively abundant seasonal wetlands, for example, at duck clubs and refuges, are not managed to provide summer water to benefit species such as the giant garter snake.

d. Riparian and Riverine Aquatic Habitats. Confining the rivers of the Central Valley with levees and constricting floodplains has virtually eliminated freshwater marsh habitat which many species depended upon. One of the most abundant populations of giant garter snakes, relative to the size of preserved habitat, occurs in the Consumnes River watershed, where floodwaters are relatively unrestricted, and backwaters are allowed to create many marsh areas.

e. Agricultural Lands. In addition to managing agricultural lands for migrating waterfowl, this section should include managing agricultural canals and drainages for the benefit of other wildlife. The giant garter snake utilizes irrigation canals for habitat and is threatened by routine vegetation clearing, bankside riprap and dredging of irrigation canals.

This section does not mention that ricefields often provide seasonal habitat for giant garter snakes. In the ricefield network, excess water is drained from the fields by a network of drainage ditches that are often routed next to the irrigation canals. These interconnecting canals, feeder canals, drains, and the flooded ricefields provide habitat and travel corridors for the giant garter snake. Ricefields in or next to historic flood basins appear to have the most giant garter snakes, for example, the American Basin.

(4) Adding a list or table identifying which plant and animal species are to be considered within each habitat type would be very valuable. At very least such a list should include all species with federal and/or state status (listed, proposed, candidate and species of concern). This would provide the reader a means for quick overview of the scope of the habitats portion of the plan. If plants are to remain excluded from the Species and Species Groups Visions, a comprehensive species list by

habitat type is extremely important to identify which plant species are specifically considered in the plan.

(5) As mentioned in General Comments for the Species and Species Groups Vision section above, number 6, rare plant community types should be specifically addressed somewhere in the plan. They could be included here or in the species section.

(6) We recommend that habitat quality be considered in relative terms. It is best defined with respect to individual species or group of species. "Improving" habitat quality for one species does not necessarily improve quality for all species, even within a "habitat type". This will become very important when decisions are made concerning specific restoration or management actions and their effects on various plant and animal species.

(7) There are many types of riparian vegetation. The Riparian and Riverine Aquatic Habitats section would be improved by a discussion of how and to what extent this diversity will be evaluated and addressed as the plan is developed and implemented.

(8) Citations should be included for all sections.

(9) The Service recommends continued and expanded consideration of plants as the Ecosystem Restoration Program Plan is developed.

Specific Comments:

(1) Table 1, Habitat Types Addressed in Visions:

Comment: This table contains 'Saline Emergent Wetland Habitat'. Another CALFED document 'Sacramento-San Joaquin Delta Ecological Zone' dated April 18, 1997, does not contain this habitat type. The Service recommends consistency in these documents.

(2) Page 2, **Seasonal Wetlands**, Background, 4th paragraph:

Comment: The list of State and federally listed species that are "endemic to or associated with vernal pools" should include specific mention of some plant species along with the animals.

(3) Page 2, **Seasonal Wetlands**, Background, 8th paragraph, last sentence:

Comment: The Service recommends including a reference and the criteria by which success was measured in the maintenance and restoration projects mentioned here.

(4) Page 2, **Perennial Grassland**, Restoration Needs, 2nd paragraph, 2nd sentence:

Comment: The Service recommends usage of "fire-adapted" rather than "evolved to survive fire".

(5) Page 1, **Agricultural Lands**, Introduction, 1st paragraph, 1st sentence:

Comment: Species are not truly "dependent on" agricultural areas to sustain their populations (if there is information that species are dependent on agriculture, cite a reference(s) for the statement here and in Table 2 for Agricultural wetland habitat and for Agricultural upland habitat). Agriculture has been introduced into native ecosystems relatively recently and thus species may opportunistically use these areas, but would be adapted to the natural ecosystem.

Introduction to Ecological Process Visions

General Comments:

(1) Placement of X2 in areas downstream of Collinsville is an important ecological process benefitting numerous Delta native fish. The further downstream of Collinsville X2 is placed, the greater the energy for entrapment of nutrients and planktonic organisms which are important to rearing fish. Delta outflow of sufficient magnitude from February through June is key to maintaining X2 downstream of Collinsville so that it provides conditions for a suitable nursery area. Delta outflow can be maintained through water releases at upstream CVP and SWP reservoirs and decreases in export pumping. The critical habitat designation for delta smelt and the Delta Native Fishes Recovery Plan described the timing of X2 placement at Roe Island, Chipps Island, and the confluence of the Sacramento-San Joaquin River (Collinsville) to provide suitable rearing habitat for delta smelt and other Delta native fish.

(2) Central Valley Streamflows--The visions in this section should tier off programs in place or ongoing. These include the Anadromous Fish Restoration Program, the March 6, 1995 delta smelt and May 17, 1995 winter-run Biological Opinions, the Bay-Delta Accord, and all Recovery Plans for listed species. CALFED should seek to contribute to the successful implementation of the aforementioned documents.

(3) A list of references should be included for each section.

Specific Comments

(1) Page 4, Water Rights:

Comment: CALFED should recommend or encourage river system adjudication throughout the Central Valley. This adjudication should include the upper mainstem San Joaquin River as the "fair share" contribution to the Delta has not been provided for over 45 years. The public trust resources responsibility and State Code 5937 have not been met.

(2) Page 5 , Linkage:

Comment: CALFED should complement existing streamflow programs. All "linkage" sections should be consistent. We suggest using the following: CALFED will coordinate with agencies involved in streamflow programs. Furthermore, CALFED will coordinate, support, contribute to, and complement related activities to increase potential success.. CALFED will identify program deficiencies and seek to add elements that will improve Bay-Delta conditions.

Introduction to Stressor Visions

General Comments:

(1) As described for ecological processes above, X2 placement downstream of Collinsville is important to the recovery of Delta native fish. Conversely, location of X2 upstream of Collinsville is an important stressor. Upstream X2 location lessens the effects of the entrapment zone in providing a rich food source for rearing fish. Additionally, upstream location places fish within the zone of influence of the state and federal export facilities, reduces the amount of available shallow-water habitat, and exposes fish to contaminants from the San Joaquin River (selenium) and other agricultural sources (pesticides, fertilizers, etc.).

(2) Contaminants: CALFED should provide "seed" money to the State's land retirement program.

(3) A reference list should be included for each section.

Specific Comments

(1) Page 1, **Invasive Riparian and Saltmarsh Plants**, Introduction, 1st paragraph, 2nd sentence:

Comment: The sentence referring to "rare native species", should be clarified as to whether it means rare native plant species and/or rare native animal species.

(2) Page 4, **Invasive Riparian and Saltmarsh Plants**, Background, Northern California black walnut:

Comment: Please cite the source(s) that support the contention that *Juglans californica* var. *hindsii* or hybrids with *Juglans regia* are now common in parts of California and have the potential to displace native species. We would appreciate copies of the supporting document(s) (mail to Diane Elam at the letterhead address).

(3) **Invasive Riparian and Saltmarsh Plants**, Background:

Comment: Perhaps iceplants (*e.g., Carpobrotus edulis, Mesembryanthemum crystallinum*) should also be included among the invasive plant species that cause problems in the Bay-Delta area.

If you have any questions or concerns about the above, contact Robert Pine at (916) 979-2725 or Jean Elder at (916)979-2130.

Sincerely,

Dale A. Pine

for Wayne S. White
Field Supervisor

CC: ARD (KCE), Region 1, Portland, OR
RD, Region 1, Portland, OR
USEPA, San Francisco, CA
CE-Sacramento (Attn: Jim Monroe, Regulatory Branch)